AN

INAUGURAL ESSAY

ON THE

YELLOW FEVER,

AS IT APPEARED IN THIS CITY IN

1795.

SUBMITTED TO THE PUBLIC EXAMINATION OF THE FACULTY OF PHYSIC, UNDER THE AUTHORITY OF THE TRUSTEES OF COLUMBIA COLLEGE, IN THE STATE OF NEW-YORK,

WILLIAM SAMUEL JOHNSON, LL.D. Preſident,

FOR THE DEGREE OF

DOCTOR OF PHYSIC,

On the 3d of May, 1797.

By ALEXANDER HOSACK, *Jun.* *A. M.*
OF NEW-YORK.

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—1797.—

For Bishop Gregory

with testimonials of great
respect from his humble
servant Spencer.

Oxford

THE FOLLOWING PAGES ARE INSCRIBED TO

Doctor JOHN BARD,

AS A TESTIMONY OF SINCERE RESPECT FOR A

MEDICAL PRACTITIONER

WHO UNITES THE CHARACTER OF A

LEARNED PHYSICIAN

AND AN

ELEGANT SCHOLAR,

TO THAT OF AN

ACCOMPLISHED GENTLEMAN;

AND AS A TRIBUTE OF PERFECT ESTEEM, BY HIS

VERY OBLIGED AND HUMBLE SERVANT,

THE AUTHOR.

PREFACE.

BEFORE the reader peruſes the following diſſertation, I muſt beg leave to inform him, that this is the firſt attempt of a young man, inexperienced in writing, and is done only in compliance with the regulations of this College for conferring the degree of Doctor of Medicine.

I have purpoſely avoided any inquiry as to the origin of the diſeaſe, or the chemical compoſition of the matter or poiſon producing it; referring the reader for particulars upon theſe ſubjects to the more complete hiſtory of the diſeaſe, as publiſhed by Doctor BAYLEY, *Mr.* WEBSTER, *and others; and have confined myſelf to a plain detail of the* ſymptoms, cauſes, *and* cure *of the diſeaſe, as far as fell under*

under my own observation, in my attendance at the New-York Hospital, and upon the private practice of Doctor SAMUEL BARD, *and my brother Doctor* DAVID HOSACK.

If a single fact, either new or useful, shall be communicated, I shall feel myself much gratified in having undertaken the task.

AN.

INAUGURAL ESSAY

ON THE

YELLOW FEVER.

HISTORY.

THE yellow fever is known by a variety of names. By the French it has been denominated *La maladie de Siam*, from a country of that name in the Eaſt-Indies, where it is ſuppoſed to have had its origin, and from whence to have been conveyed to diſtant parts of the world. Sometimes they call it *La fiévre matelotte*, from its attacking ſeafaring people and foreigners more readily than the natives of the country in which it prevails. The Spaniards have

have given it the name of *vomito préto*, or the black vomit, which is one of its moſt malignant and characteriſtic ſymptoms. Some have called it the *malignant fever*—others the *putrid bilious*, and *bilious remitting fever*, &c. This diſeaſe firſt appeared in this city about the year 1740; and, as I am informed by Doctor JOHN BARD, who was at that time a practitioner, it manifeſted the ſame malignant ſymptoms which characteriſed the late mortal epidemic.—In ſome of the ſouthern ſtates it has been known to prevail at a much earlier period.* In 1791 it appeared again in New-York, and has been deſcribed in a diſſertation publiſhed by Doctor ADDOMS.

THE epidemic I am now about to deſcribe, and which has univerſally received the name of yellow fever, firſt appeared about the middle of July, and continued until the weather became cold. The ſeaſon,

* See Dr. Lining.

ſon, during its prevalence, was very hot and moiſt. It raged with moſt violence in thoſe parts of the town adjacent to the eaſtern ſhore, where the air is leſs pure, and the ground lower than in any other part of the city; which, conſequently, muſt, in ſome degree, ſerve as a reſervoir for the filth of the upper parts of the city. It attacked perſons of all ages, adults more frequently than children, and males than females—foreigners more than the natives, or ſuch of our inhabitants as had lived in warm climates.* Frenchmen and blacks

* The same has been remarked in the West-Indies, and in the other parts of the United States, viz. that foreigners from northern climates were more ſusceptible of the disease than the natives. In support of this opinion, I beg leave to introduce the following extract of a letter from Doctor GEORGE DAVIDSON to Doctor DAVID HOSACK, dated Fort-Royal, Martinique, September 23, 1796; in which he offers the following ingenious explanation of this fact: "I have already mentioned the experiments made upon the atmospheric air here, with a view to ascertain the composition of it. Those experiments have been frequently repeated, in the presence of the late Doctor CHARLES WEBSTER, of Edinburgh, Doctor SAUNDERSON, of London,

who had lately arrived from the Weſt-Indies, were rarely the ſubjects of this diſeaſe, as they appeared to have been inured, and thence rendered inſenſible to the operation of

and Doctor CHISHOLME, lately. The result has shewn a much greater proportion of oxygene than what I could have conceived—no less than $\frac{67}{100}$ of oxygene gas. It may, perhaps, tend to explain some difficulties which we meet with in the phenomena attending upon yellow fever, viz. why Europeans, or those from cold climates, of tense, rigid fibres, and in the prime of life, are the subjects of its attack. I suppose, what you will admit, that Europeans or Americans, from cold climates, have a more tense and firmer texture of fibres than Creoles, or those who have long resided here—cold tending to brace the habit and invigorate the body, and whilst it does so, increasing the appetite and digestive powers. Besides this connection between the stomach and surface, we also observe a remarkable sympathy between the stomach and lungs: whatever tends to invigorate the stomach, remarkably increases the action of the lungs, as we may perceive from what follows after a full meal and a few glasses of generous wine. Inspiration and respiration are increased; a greater quantity of atmospheric air is taken into the lungs, and a greater quantity of oxygene fixed in the blood: hence the irritability; a glow of genial heat diffused, and the circulation becomes more rapid. But as the atmospheric air in Europe contains a less proportion of oxygene, the quantity of it fixed will be proportioned to the necessities and calls of the system. It is, however, far different in those climates: before the appetite and digestive faculties are impaired, whilst the tone

of its cauſe; but their exemption is, no doubt, more particularly to be aſcribed to their temperate mode of life, and eſpecially their freer uſe of vegetables; for it is certain, that thoſe who moſt indulged in the uſe of animal food and ſpirituous drinks were moſt ſuſceptible of the diſeaſe.

The ſymptoms which marked the yellow fever in its firſt ſtage were, a general languor and heavineſs—depreſſion of the ſpirits, ſometimes approaching to ſtupor—diſinclination to motion—a ſenſe of cold, and ſhivering—acute pain in the head, eſpecially above the eyes—pains in the back, and frequently extending down the extremities—the ſkin was hot, dry, and much fluſhed, not unlike the ſcarlet bluſh of an eriſepelatous inflammation—the eyes were ſuffuſed

and vigour of the system still continue, and also the corresponding action of the lungs, a much greater proportion of oxygene being contained in the atmospheric air, will be fixed, and the irritability of the system increased; or, in other words, the system surcharged with oxygene. Hence the predisposition to fever."

ſuffuſed with water, and the veſſels of the tunica adnata much diſtended with blood: ſo conſtant were theſe laſt ſymptoms, that they may, in a certain degree, be conſidered as characteriſtic of the diſeaſe. The pulſe was, for the moſt part, frequent, full, and hard—reſpiration was proportionably quickened, attended with much anxiety, ſtricture, ſoreneſs, and frequently intenſe heat about the precordia—the tongue was foul, the appetite depraved, with nauſea, vomiting, and not unfrequently pain about the region of the ſtomach: theſe were among the firſt ſymptoms of the diſeaſe. The bowels were conſtipated, unleſs the patient laboured under a diarrhœa at the commencement of the fever—the urine, in this ſtage of the diſeaſe, appeared, for the moſt part, as in the firſt ſtage of fevers in general, viz. high-coloured, and ſmall in quantity; in the laſt ſtage, when the fever had continued for ſome days with violence,

and

and the general maſs of fluids became changed, this excretion manifeſted the ſame alterations, becoming ſometimes turbid, and at others yellow, as if tinged with bile. —Such are the ſymptoms which generally appeared at the commencement of the diſeaſe, conſtituting what I would call the inflammatory ſtage, but differing from any inflammatory diſeaſe, inaſmuch as in the former there was no particular part of the body which appeared to be excluſively the ſeat of inflammation. Where the diſeaſe terminated favourably, there was, for the moſt part, an evident abatement of the above ſymptoms in forty-eight hours; and in the courſe of five days the patients were generally freed from fever, but were left greatly debilitated by the violent operation of the poiſon producing the diſeaſe, and the evacuations which became neceſſary for the removal of the fever: even in thoſe inſtances where blood-letting, the moſt debilitating

ing of all evacuations, was not employed, the patient was ſo reduced as to require all the reſources, both of nature and of art, for his ſupport. This ſtage of the diſeaſe was rather marked by ſymptoms of debility, yet accompanied with great *irritability*, ſo much ſo, that the leaſt imprudence in diet, clothing, bodily exertion, or indulgence in converſation and company, would frequently induce a return of fever. But where this abatement of the diſeaſe did not take place within the firſt three days, a very different and more malignant train of ſymptoms appeared, partaking more of the ſymptoms of the laſt ſtage of putrid fever, as deſcribed by HUXHAM and CULLEN.

IN the laſt ſtage of the diſeaſe, the pulſes ſunk, became more frequent, irregular, and ſometimes intermittent: the perſon would lay continually on the back, with the knees drawn up, and the body ſinking toward the bottom or foot of the bed; the breathing became

became proportionably more difficult; and the cruſt which had formed on the tongue became of a black colour, which change alſo took place on the lips and teeth; the yellowneſs became more general over the body, attended with cold clammy ſweats; the vomiting now became more frequent and copious; in ſome inſtances patients have vomited inceſſantly, and in aſtoniſhing quantities; and what was brought up reſembled the grounds of coffee: this, for the moſt part, was conſidered as a fatal ſymptom: there were, however, ſeveral inſtances of recovery after this had taken place to a conſiderable degree.* It is worthy of remark,

* The opinions, as to the nature and origin of the black matter vomited up, are very numerous and different. Some have supposed it to be part of the stomach; but we must entirely reject this idea, when we consider the enormous quantities which patients sometimes throw up. The most probable opinion is, that it is bile imperfectly formed. [*See Saunders on the liver.*] Here I beg leave to quote the words of Doctor JACKSON, who, from dissection, has formed the same opinion: after opening the abdomen, &c. and noticing the appearance of the viscera, he says, " The liver

remark, that when the vomited liquor acquired this black colour, a diarrhœa ſometimes followed, in which there was a diſcharge of a ſimilar ſort of black matter, but more reſembling tar or molaſſes. The florid colour now left the eyes, and they became yellow and ſunk. The functions of the brain and nervous ſyſtem were alſo very much deranged: the patient was attacked with delirium, attended with ſubſultus tendinum, and ſometimes a perfect ſtupor, with a convulſive kind of ſighing. The ſpeech began to faulter and tremble. The patient

and spleen were generally enlarged in size; the colour of the liver was often of a deeper yellow than that of any other of the abdominal viscera; while the texture of the spleen was frequently less firm than it is found to be in its natural state. The gall-bladder, for the most part, was moderately full, but the bile it contained was black and thick. The biliary ducts were likewise enlarged, and moderately filled with the same sort of bile which was found in the gall-bladder; while the very blood-vessels of the liver bore the marks of uncommon distension. In the cavity of the stomach, likewise, there was usually more or less of a dark coloured liquor, similar to what had been thrown up in the last stage of the disease."

patient appeared very uneaſy, and ſhewed a diſpoſition to leave the bed. Sometimes a deceitful tranquility appeared, and by ſome was ſuppoſed to be a favourable ſymptom; but the patient, upon getting aſleep, was much agitated. The ſtools and urine became black, very offenſive, and diſcharged involuntarily: in ſome inſtances there was an entire ſuppreſſion of urine: the extremities became cold, but the heat ſtill continued about the ſtomach: blood was diſcharged from the mouth, noſe, ears and eyes, and from thoſe parts of the ſkin where bliſters had been applied. Sometimes blood was effuſed in the cellular membrane, appearing in the form of mortification—petechiæ appeared about the neck and breaſt—vibices, or livid ſpots, came out upon the body, particularly upon the abdomen—the perſpiration became very fœtid—the eyes ſhone like glaſs—hiccough and muttering came on, and were followed by death.

Doctor Rush, in his history of the yellow fever as it prevailed in Philadelphia, has taken notice of buboes and carbuncles as among its symptoms. I do not know a single instance where these symptoms have occurred in this disease in New-York. In the West-Indies these symptoms are not uncommon, as would appear from the following extract of the before-mentioned letter, which I have introduced, as it serves to establish the similarity of the yellow fever to the plague.—"We have had a return of the yellow fever during the months of July, August and September, much more violent than I ever recollect seeing. The rainy season set in very late, and the weather proved, during these three months, remarkably warm and sultry. The disease commenced early in July, and was not only contagious, but attended with pestilential symptoms. Buboes appeared in several patients, who, however, recovered; and I have seen several

ral inſtances of the anthrax and peſtilential carbuncle. One patient evidently ſunk from a carbuncle on his elbow, the hæmorrhage from which could ſcarcely be ſuppreſſed by pledgits dipt in diluted vitriolic acid; and two others alſo appeared upon the foot and ankle of the ſame patient. I am at preſent attending a medical gentleman who has above fifty carbuncles upon his body. The diſcharge has reduced him, but he is recovering. The appearance was firſt a red unequal eryſipelatous appearance upon the ſkin; in the centre appeared an elevated ſpot, which gradually changed to black, burſt, and diſcharged a blackiſh bloody ichor, and left behind it a deep pit. Upon other parts a white puſtule appeared, which, after burſting, diſcharged pus and bloody ſerum, and pitted in the ſame manner. The back, loins, and upper part of the thighs were principally affected."

PREDIS-

PREDISPOSING CAUSE.

PREDISPOSITION is that ſtate of the body not of itſelf capable of producing the diſeaſe, but rendering the body more ſuſceptible of the exciting cauſe. In order to produce yellow fever, it is neceſſary that the body ſhould be in ſuch a ſtate as to receive the action of the exciting cauſe. This ſtate appears to be a peculiar irritability in the ſyſtem, by whatever means induced. Upon no other principle can we explain the reaſon why the contagion does not affect every perſon within its atmoſphere, and why the attendants of the ſick are not always attacked. The cauſes which produce predispoſition in the body, for the moſt part, are,

1ſt. Fear, which poſſeſſes great power in debilitating the body, and hence rendering it more irritable. Upon this principle we may

may account for the good effects of the different preventives which many were in the habit of using; such as the wearing a small quantity of camphor, vinegar, &c. constantly about the body, inspiring them with a certain degree of courage. The use of tobacco was supposed to have a good effect in counteracting the disease, probably from its possessing more stimulus than the matter of contagion.

2d. Heat, especially exposure to the direct rays of the sun, was a common cause, as it assisted the stimulus of contagion in bringing on indirect debility. Fire also rendered the contagion more active. To prove this we notice, that a great majority of those that were infected were such as, from the nature of their occupations, were much exposed to the heat of the sun and fire.

3d. Fatigue, whether induced upon the mind or body, and from whatever source.

4th. Grief. Persons who attended friends

or

or relatives in this diſeaſe were not unfrequently ſeized during *their attendance.*

5th. Exceſs in venery, and other evacuations, ſuch as bleeding and purging, aided by fear, which cauſed ſome perſons to adopt theſe means in order to prevent the operation of contagion.

6th. Cold; accordingly ſuch as had been previouſly much heated, upon getting themſelves wet, drinking largely of cold water, or expoſing themſelves to a ſtream of cool air, were readily attacked with the diſeaſe.

7th. Intemperance in eating or drinking: taking either too large or ſmall quantity of improper food; or a ſcanty allowance of common diet.

EXCITING

EXCITING CAUSE.

DISEASE is brought on by the action of the exciting cauſe, after the body is rendered capable of receiving the contagion by the action of the prediſpoſing cauſe. The yellow fever being a contagious diſeaſe, it muſt undoubtedly depend upon the action of a poiſon either generated or introduced into the body. This matter, or poiſon, is generally acknowledged to be exhaled from animal and vegetable ſubſtances in a ſtate of putrefaction: but, as there is a great contrariety of opinion upon this ſubject, I ſhall purpoſely paſs it over, referring the reader to the works of LAVOISIER and others.—There are alſo many different opinions as to the mode in which this contagion acts upon the body in producing the diſeaſe. Some have ſuppoſed that it enters the ſyſtem

tem by the ſtomach—ſome that it enters by the lungs—and others, that the body receives it by the pores of the ſkin. All theſe opinions have their advocates; but by whichever paſſage it is communicated to the ſyſtem, whether by the ſtomach, the lungs, or the pores of the ſkin, it is certain, that, in common with the matter of ſmall-pox, meaſles, lues venerea, the venom of the rattle-ſnake, &c. it produces a violent irritation throughout the whole ſyſtem. Its firſt operation I conſider to be upon the *nervous ſyſtem:* hence the violent pains of the head, back, and extremities of the body —hence the ſickneſs of ſtomach and vomiting—hence the ſenſation of cold and conſtriction upon the ſecreting and excreting veſſels. Such an irritation upon the nervous ſyſtem, with an interruption to the ſecretions and excretions, are neceſſarily followed with a quickened circulation. The irritating matter of itſelf is ſufficient

to

to produce this effect; but the ſuppreſſion of perſpiration, the confined ſtate of the bowels, and eſpecially the retention of bile of an uncommonly acrid quality, muſt alſo unqueſtionably have a ſhare in adding to this irritation and increaſed action.

CURE.

HAVING ſtated the ſymptoms and cauſes of the diſeaſe, we are next to conſider the indications of cure, which appear to be,

Firſt, To prevent the further operation of the poiſon producing the diſeaſe.

Secondly, To procure a ſolution of the inflammatory ſtage of the fever.

Thirdly, To counteract the putreſcent ſtate of the body, as deſcribed in the ſecond ſtage of the diſeaſe. And,

Laſtly, To reſtore the tone of the ſyſtem when the preceding indications are accompliſhed.

Firſt, To prevent the further operation of the poiſon producing the diſeaſe. To this end it is neceſſary that the patient be removed from the atmoſphere in which he took the diſeaſe, and placed in a ſituation where he may enjoy a pure, free air: all articles capable of conveying the contagion ſhould be immediately removed from the body, ſuch as clothing, &c. in place of which there ſhould be clean dry clothing, bedding, &c.

Secondly, To procure a ſolution of the inflammatory ſtage of the fever. It is neceſſary to moderate the increaſed action of the ſyſtem, and to remove, as far as poſſible, every other ſource of irritation. To evacuate immediately the poiſon from the body, when once introduced, is as impoſſible as to eradicate the matter of ſmall-pox, meaſles,

or

or any other diſeaſe produced by ſpecific contagion. In the treatment of yellow fever, as in that of the ſmall-pox, if the analogy be a juſt one, the buſineſs of the phyſician appears to be, to moderate the action of the poiſon producing the diſeaſe, and, at the ſame time, to remove every circumſtance which can aggravate its operation upon the body. With a view to diminiſh the increaſed action of the ſyſtem, evacuations of different kinds were employed. Some practitioners had recourſe to *blood-letting*, followed by *purging* and *ſweating*; and others truſted entirely to the two latter. With reſpect to blood-letting, my obſervation has been, that the promiſcuous uſe of the lancet was very injurious and unſucceſsful. In the New-York hoſpital it was frequently employed, but in the majority of caſes the diſeaſe terminated fatally; yet, in ſome few inſtances, where the conſtitution was uncommonly plethoric, and the determination

tion to the head more violent than uſual, I have obſerved good effects follow the loſs of a *moderate* quantity of blood. But, generally ſpeaking, blood-letting was attended with pernicious conſequences. The ſame has been confirmed by the obſervations of ſeveral of our moſt reſpectable practitioners. The more common and ſucceſsful practice was,

1. To procure a free evacuation from the bowels. The purgative medicines which were employed were many and various. By ſome, calomel and jalap were preſcribed, and, in the beginning of the diſeaſe, with good effect. Others adminiſtered a mixture of rhubarb and magneſia with cinnamon or mint-water. This alſo anſwered well in many caſes, where the ſtomach was irritable, and rejected the former medicines. But the medicine which was the moſt ſucceſsful, and acquired the greateſt reputation, was the Glauber's ſalts, given

in

in warm diluting drinks. The doſe was generally from one to two ounces, diſſolved in a pint of gruel made of Indian meal, and given in divided doſes until it operated freely; the patient at the ſame time drinking freely of gruel or chicken water, to promote its operation. Salts, exhibited in this form, for the moſt part ſat well on the ſtomach: they were expeditious in their operation, and, in many inſtances, poſſeſſed the additional advantage of relaxing the ſkin and inducing perſpiration, eſpecially where the patient drank largely during their operation. But when the ſtomach was ſo much irritated as immediately to reject every thing taken into it, recourſe was then had to glyſters, compoſed of vinegar and water, quickened by the addition of a ſmall quantity of molaſſes: theſe ſcarcely ever failed to produce the intended effect.

2. Having procured copious and free evacuations from the bowels, the next object

ject appeared to be to relax the ſurface of the body, and induce free perſpiration. In ſome inſtances this ſalutary diſcharge came on immediately after the bowels had been emptied, and was readily continued by taking plentifully of warm drinks; but, for the moſt part the febrile ſymptoms continued violent, the ſkin remained hot and dry, the pains ſtill diſtreſſing, and it became neceſſary to have recourſe to more active means to induce *ſweating*. For this purpoſe many ſudorific medicines were employed. Some practitioners uſed *emetics*, and others ſmall doſes of James's powders, and the different preparations of antimony. Vomiting, in this diſeaſe, I have generally obſerved to be of dangerous tendency. It may, perhaps, not be amiſs, when the diſeaſe firſt diſcovers itſelf, and is attended with much ſickneſs and vomiting, to empty the ſtomach freely, by means of an infuſion of chamomile flowers: but the exhibition of *emetics* I conſider

ſider to be highly dangerous and improper. I believe I have ſeen ſome caſes in which the death of the patients could be aſcribed to no other cauſe than the inceſſant vomiting brought on by an emetic given in the commencement of the diſeaſe. But the moſt certain and ſucceſsful means were, to waſh the whole ſurface of the body with cold vinegar and water, and immediately after covering the patient with blankets—to adminiſter ſuch medicines as poſſeſs the effect of bringing on ſweating: of theſe the ſpiritus mindereri and ſaline draughts of RIVERIUS ſucceeded well, more eſpecially if the warm drinks were continued, ſuch as the infuſion of ſnake-root, gruel, toaſt water, tamarind water, lemonade, &c. Theſe were much aided by applying to the feet of the patient a warm brick, ſteeped in vinegar and covered in a flannel cloth wet with vinegar or ſpirits: the ſteam, thus emitted and diffuſed through the bed, had a won-

a wonderful effect in ſoftening the ſkin and exciting ſweat, eſpecially where the cold waſhing had been previouſly employed.—Some practitioners have preferred the practice of plunging the patient ſeveral times in a cold bath, and violently daſhing the body with cold water. But ſimply waſhing the patient with cloths dipped in cold vinegar and water, was found much preferable to immerſion, both becauſe it more effectually diminiſhed the heat of the ſyſtem, and was leſs fatiguing to the patient. Experiments have proved, that repeatedly wiping and waſhing with water, in the ordinary way in which the operation is performed, diminiſhes the heat ſeven or eight degrees more than ſimple immerſion, or daſhing it over the body with pails.

The practice of cold bathing in fevers of this type is not a new one, but was very commonly employed at Breſlaw, in Sileſia;

Sileſia;* and of late years has been very ſucceſsfully applied in the Weſt-Indies,† as well as in different parts of Europe, where diſeaſes of this type prevail.

Professor Gregory, of Edinburgh, and Doctor Currie, an eminent phyſician at Liverpool, have alſo preſcribed it with great advantage in the low typhus fevers of thoſe cities. But its great ſucceſs in the New-York hoſpital, as employed by Doctor Samuel Bard, and in the private practice of my brother, have fully convinced me of the propriety of its uſe. It is alſo proper to remark, that where the phyſician was not called to the patient in the firſt ſtage of the diſeaſe, and putrid ſymptoms had appeared, and the patient had become much debilitated, the cold bath was injurious; and from the abuſe of cold bathing, by employing it in the laſt ſtage

* See De Haen's Ratio Medendi.

† Doctor Jackson on the Diseases of Jamaica.

of the diſeaſe, it has fallen into diſrepute with ſome practitioners. But as the abuſe of a thing is no argument againſt its uſe, I repeat my obſervation, that in the firſt or inflammatory ſtage of the diſeaſe, it was one of the moſt uſeful remedies that was employed. When the cold bath had been thus made uſe of, and immediately after followed by the ſpiritus mindereri or ſaline mixture, with plentiful dilution, it rarely failed to produce ſweating in the courſe of fifteen minutes; and when once induced, it was eaſily continued by the repetition of the ſudorific medicines and drinks, until a ſolution of the fever was obtained. In ſome inſtances where the patient refuſed his drink and medicines, or, from the careleſſneſs of the nurſes, they had not been ſupplied as frequently as was proper, and the perſpiration had been ſuppreſſed, it became neceſſary to repeat the cold bathing, which ſeldom failed to procure

cure a return of the ſweating. By the continuance of this diſcharge an abatement of all the ſymptoms took place: it appeared to operate as a ſpecific in the diſeaſe; the pulſe in a ſhort time became moderate; the heat of the ſkin diminiſhed; the pain in the head and back, before ſo diſtreſſing, was alſo relieved; the ſickneſs of ſtomach and vomiting were removed; and, in the courſe of two or three days from the attack, the patient had little elſe to contend with but mere debility.

Thirdly, In thoſe caſes where the phyſician was not called in the early ſtage of the diſeaſe, where the bowels were not freely emptied, and perſpiration had remained ſuppreſſed, with a continuance of the fever, a more diſtreſſing train of ſymptoms appeared, as deſcribed in the ſecond ſtage of the diſeaſe, and required a different mode of practice: few patients, however, recovered from this ſtage of the diſeaſe.

WHERE the ſtomach was much diſturbed with ſickneſs and vomiting, which was one of the moſt dangerous ſymptoms, the ſaline draught was exhibited in the effervescing ſtate; and, in ſome inſtances, *yeaſt* was employed with advantage, followed with nouriſhing antiſeptic drinks, as milk-punch, lemonade, porter diluted with water, &c. Snake-root-tea, where it ſat well upon the ſtomach, appeared to poſſeſs moſt advantages in this ſtage of the diſeaſe, inaſmuch as it procured a free determination to the ſurface of the body, independent of its antiſeptic properties; but where the ſtomach rejected every thing, recourſe was had to bliſters, applied immediately over the region of the ſtomach, and, in ſome inſtances, with the moſt happy effects. Spirituous fomentations, applied to the lower extremities, eſpecially where they were followed with perſpiration, in many inſtances gave relief to the ſtomach, and rendered it more retentive.

WHERE the bowels were in a coſtive ſtate, purgative medicines were given to the patient; at the ſame time injections were employed, compoſed of vinegar and water, with the addition of molaſſes, and repeated every hour until they produced the deſired effect.

WHEN the functions of the brain and nervous ſyſtem were much diſturbed, as indicated by delirium, ſubſultus tendinum, reſtleſſneſs, &c. ſinapiſms, compoſed of rye-meal, vinegar, and muſtard, applied to the ſoles of the feet, bliſters to the ankles, to the inſide of the thighs, and to the head, in ſome few inſtances procured relief.—In this ſtage of the diſeaſe ſome practitioners had recourſe to bark, wine, and the tonic treatment in general; but the plan I have obſerved to be attended with moſt ſucceſs in addition to the medicines and treatment related above, was to ſupport the patient's ſtrength, by the mildeſt

nouriſhment, and ſuch as was the leaſt ſtimulating to the ſyſtem, viz. ſoups, compoſed of a great proportion of vegetables, ſago, milk-punch, with a ſmall quantity of ſpirits or brandy, merely ſufficient to render it grateful to the ſtomach. In addition to this mode of treatment, great attention was paid to the removal of every external ſource of irritation, by frequent changes of linen and bedding, by frequently wiping the body with cloths dipped in ſpirits or vinegar, removing every offenſive matter from the room, and by correcting the atmoſphere around him, by the exploſion of gun-powder, ſprinkling vinegar over his bed, and through the room, and procuring a free circulation of freſh air.

Fourthly, Having, by the means above enumerated, procured an entire ſolution of the fever, it remains to reſtore the ſtrength of the ſyſtem. In the ſtage of the diſeaſe alluded

alluded to under the laſt indication, while a degree of fever remained, an active tonic or ſtimulating plan of treatment was found injurious; but, when a perfect ſolution of the diſeaſe was obtained, and the patient laboured under mere debility of body, this mode of treatment was not only admiſſible, but, in many inſtances, the patient's ſtrength was ſo completely exhauſted, that the moſt reſtorative medicines and diet became neceſſary. In this ſtate of body recourſe was had to the bark, ſerpentaria, the different bitters, mineral acids, and the uſual medicines preſcribed with this intention, viz. wine, porter, milk-punch, &c. The diet employed with moſt advantage conſiſted chiefly of vegetables: ſago, tapioca, indian and oat-meal gruel, rendered palatable by the addition of wine, were, for the moſt part, grateful to the patients—were ſufficiently nouriſhing, and, being of a more antiſeptic quality, were found leſs hazard-

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ous than the uſe of animal food. When animal food was employed, it was in the form of ſoups, with a large proportion of vegetables, or calves-feet jelly, with the addition of wine: in this form it became leſs exceptionable. But ſolid animal food was very commonly injurious, retarding the recovery of the patient, and in many inſtances producing a return of the diſeaſe; it was therefore very generally prohibited during the convaleſcent ſtate of the patient.

The drinks employed with moſt benefit, and which were found moſt grateful to the ſick, were wine and water, milk-punch, porter, &c. Such was the diſeaſe, and ſuch the mode of treatment, as far as has come within my knowledge.

THE END.

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Book taken apart. Leaves deacidified with magnesium bicarbonate. Resewed on linen cords. New all-rag end paper signatures. Unbleached linen hinges. Rebound in quarter unbleached linen. Fabriano paper sides.

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